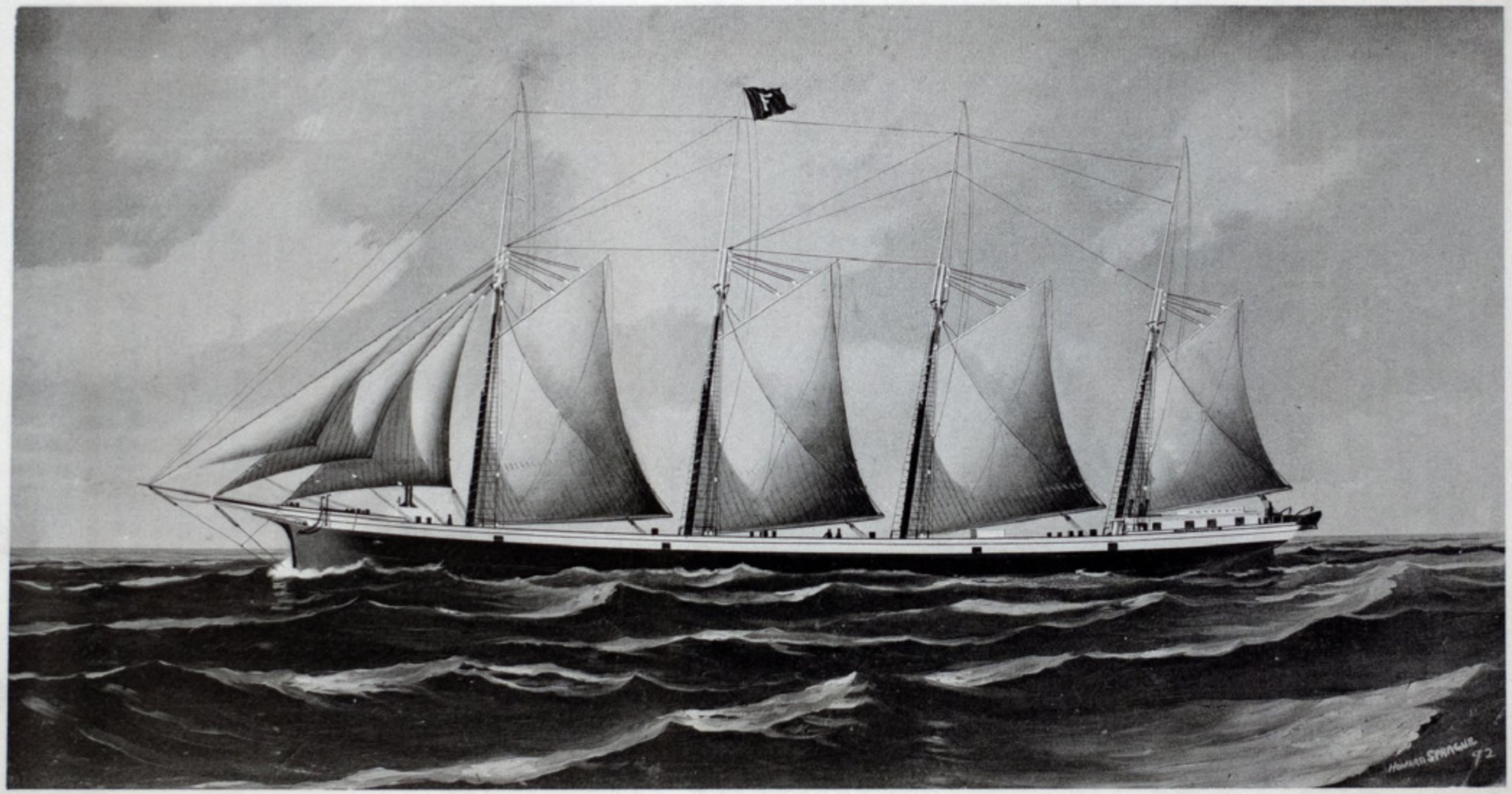

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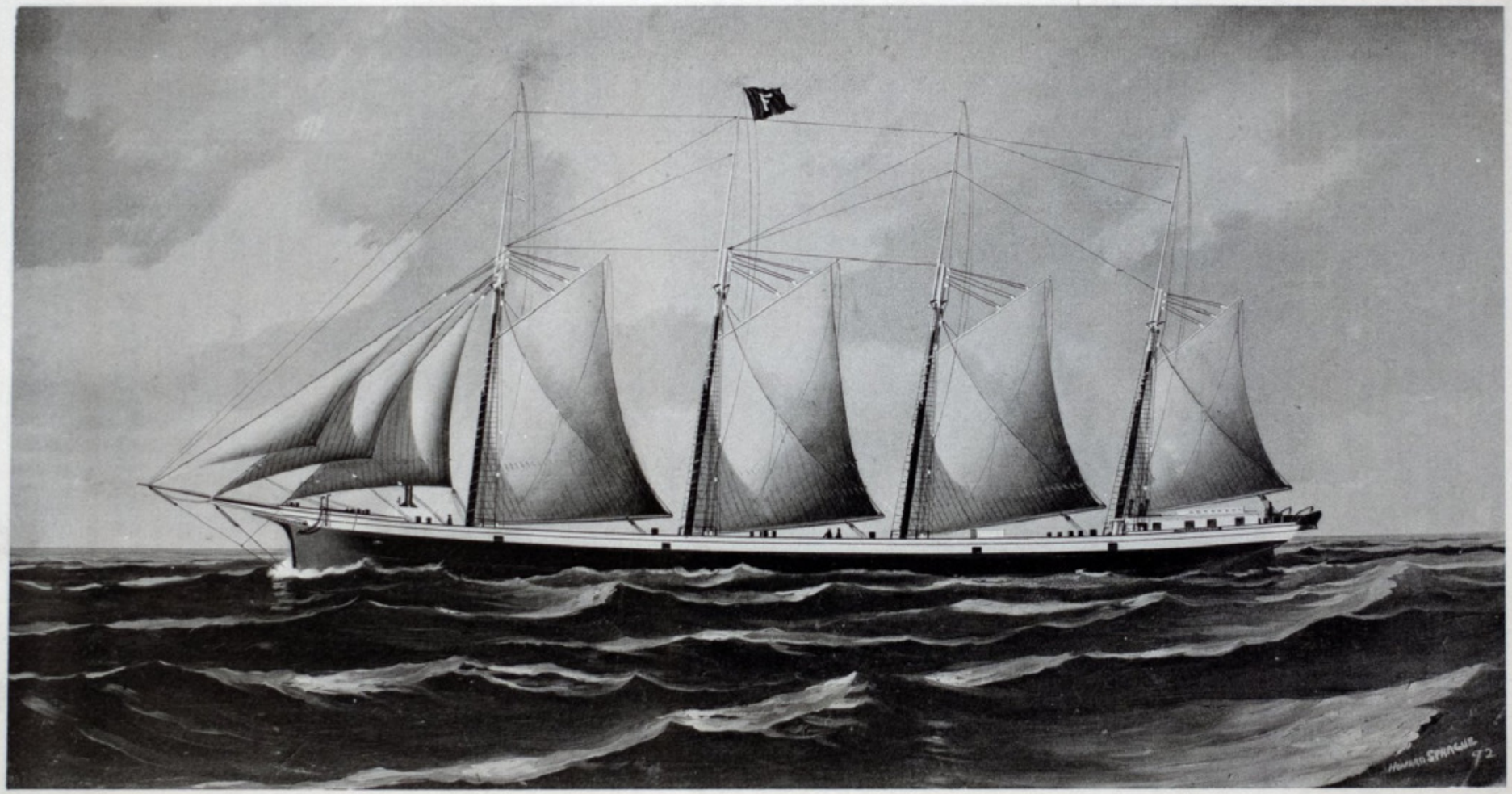

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"JOHN C. FITZPATRICK."

THE MARINE RECORD.

DEVOTED TO COMMERCE, ENGINEERING AND SCIENCE.

ESTABLISHED 1878.

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A NEW SYSTEM OF BULKHEADS FOR METAL SHIPS.

There are still some naval architects with enough originality to attempt a departure from the ordinary forms of construction in iron and steel vessels. According to the Liverpool *Journal of Commerce*, Mr. James Sanderson, chief draughtsman in the shipbuilding department of the Palmer Shipbuilding and Iron Co., Jarrow, has just patented a system for the formation of bulkheads and other kindred structures, which promises to supersede the old system of construction, especially in ships of large tonnage, where it is essential that the bulkhead should offer the greatest amount of resistance, with the minimum amount of bulk and weight. The patentee styles his invention the "Undulatory" system, in contradistinction to the term corrugated—the former being illustrated by the waves, the latter by the ripples of the sea. The undulations are formed by riviting together a series of flanged or curbed plates, which form at once the plate-stiffners and brackets of the structure. Elaborate calculations of comparative resistance indicate that the "undulatory" bulkhead possesses a great advantage over the ordinary structure. Even with thinner plates the increase is over 25 per cent., and by a slight modification of the undulations this percentage can be further increased. With regard to the cost the patentee is of opinion that like most new methods of doing work, the initial cost may not be much less than that of an ordinary bulkhead; but, after a little experience in their construction, the cost will be appreciably less, especially in the cases of water pressure testing. Mr. Sanderson's paramount desire in prosecuting an "undulatory" theory into a system was to aim to secure greater stability and safety of ships. The importance of the bulkhead question was recently brought prominently before the public through the action of a committee appointed to inquire into the subject, over which committee Mr. Charles Harland, of the shipbuilding firm of Harland & Wolf, of Belfast, was chairman. And it is no slight encouragement to Mr. Sanderson that Mr. Harland as such a high appreciation of the undulatory system of bulkheads. In the construction of dock gates and coffer dams, the patentee claims that his system offers immense advantages over the present system, ensuring, as it does, all the required rigidity and power of resistance, with considerable less weight, so that the undulatory system may be well worthy the consideration of lake iron and steel shipbuilders.

REACHED THE RECORD LIMIT.

Considerable good-natured rivalry has existed this season regarding the wheat cargoes carried out of Chicago. We have so frequently recorded the limit reached that the latest to date demands equal space. The Western Reserve loaded 112,431 bushels, the E. C. Pope 125,730 bushels of corn, and the Onoko up to the date of our last issue topped the limit by loading and carrying all well 113,820 bushels of wheat. Now comes along the W. H. Gilcher and knocks out the record made by the Onoko, but only by 56 bushels, her total cargo being 113,885 bushels of wheat from Chicago to Buffalo. The Gilcher, therefore, carries the pennant.

AN ENTERPRISING VESSEL OWNER.

The accompanying portrait of Mr. John C. Fitzpatrick, Cleveland, O., managing owner of the large new lake schooner, named after him, and a photo-gravure supplement of which we present to our subscribers with this issue of THE RECORD will be widely recognized by vessel men at all lake ports.

The subject of this brief sketch was born in Buffalo, N. Y., and is the son of Thomas Fitzpatrick, a pioneer among vessel owners, and one of the best known men in Cleveland marine circles to-day. The entire career of Mr. Fitzpatrick, Jr., has been spent in close connection with lake marine interests, and marks the progressive energy of a talented business man, whose well directed efforts in the skillful handling of vessel property is forcing him rapidly to the front. His first position was that of freight clerk under E. A. Buck, editor and proprietor of *Wilkes Spirit of the Times*, but at that time manager of a large freight warehouse in Cleveland, O. At the age of nineteen Mr. Fitzpatrick was clerk of a steamboat, and in that capacity was promoted to larger and more important passenger steamers in the Lake Superior trade until he reached the age of 29, when he resigned his well earned sailing reputation to take a position in the office of the United States steamboat inspection service in Cleveland, O., where he has since resided, steadily acquiring an influence and standing second to no man of his years. Since his retirement from the steamboat inspector's office, Mr. Fitzpatrick has held shares in a number of boats, exercising a managing ownership of the steamers Schoolcraft, Kershaw, and schooner Tremble, and identifying himself as a partner of the firm of Mitchell & Co., vessel brokers and owners, the firm then consisting of Capt. John Mitchell, John C. Fitzpatrick, and John F. Wedow; Capt. Alfred Mitchell has since resigned from sailing and become a partner in the firm, thus forming a quartette of vessel men who are thoroughly well versed in the chartering, managing, and insurance of all classes of tonnage. The steamer Hope and the large new schooner John C. Fitzpatrick were a short time ago incorporated under the name of the Mentor Transportation Co., and in addition to this Mr. Fitzpatrick has since made a valuable investment in the new line of side wheel steamers to be placed on the Cleveland-Buffalo route next season—an enterprise in which a number of the shrewdest vesselmen are financially interested and the successful result of which is already assured as an important passenger route.

JOHN C. FITZPATRICK.

A NEW INVENTION FOR SHAFT BEARINGS.

Simon Ingersoll of Stanford, Conn., has recently perfected an invention that may prove of great value to builders and owners of steamboats and steamships who are endeavoring to construct vessels having great speed. The object he has attempted to obtain is to reduce the friction of propeller shafts to a minimum. Not long ago Mr. Ingersoll took voyage in a steamship on the Pacific mail line, and his curiosity attracted him to the engine room. He found that the shaft of the propeller was very hot, and upon inquiry of the engineer learned that the heating of the shafts of the modern steamships was one of the greatest hindrances to the speed of the boat and a source of danger. Of course he knew that the heat was caused by friction, and he immediately set his brains to work to invent some means for overcoming the trouble. His invention is similar to the ball bearings on bicycles, which reduces the friction to an imperceptible fraction; but in his reducer, instead of using balls, his bearings are small wheels through which the shafts runs.

In an experimental trial of the reducer on a small scale it was found that one-third more speed was attained with the same consumption of coal, and the working of the invention was in every way satisfactory. As soon as some details are arranged the reducer will be placed on a steamship on the Pacific mail line for trial. The inventor is enthusiastic over the result of his experiment, and says that by the use of his reducer, the steamship City of Paris can lower her record between New York and Queenstown at least half a day, if not more, with the use of no more fuel than is at present required. Mr. Ingersoll is 82 years of age. He has spent his days in developing new ideas in mechanics, one of his most important inventions being the Ingersoll rock drill, which was introduced in England with great success.

EFFICIENCY OF THE LIFE SAVING CREWS.

It is unanimously conceded that the United States has adopted the best system of saving life from shipwrecks, and under the present regime a zealous *esprit de corps* exists as evidenced by the keeper of the Sturgeon Bay, Wis., Life Saving Station, who sprung an alarm near midnight recently to test the alacrity of his crew. All hands except the lookout, were turned in and asleep. From the record kept at the station it is shown that in just 57 seconds the crew were out in the harbor in their surf boat. Capt. Boutin says he intends to have the best drilled crew on the lakes, and it looks as if such tactics as the foregoing would soon bring it about.

LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interest of Lake Carriers and improve the character of the service rendered to the public.

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H. S. Hodge, - -	Detroit.		

CLEVELAND.

Capt. A. F. Green has been appointed master of the schooner Ida Keith.

Capt. James Ash, of Buffalo, visited this port on Tuesday on vessel business.

Capt. Alex McDougall passed through the city on Saturday evening, bound west.

The ore handlers' strike at Fairport is settled. The men returned to work Tuesday morning.

The Ship Owner's Dry Dock is receiving a wide patronage and docking is very brisk.

Lieutenant Moore, U. S. N., acting superintendent of the ninth life saving district, visited this port Wednesday.

The London Assurance Co., through Palmer & Co., have paid S. H. Curtis his insurance on his share in the steamer Western Reserve.

Mr. Thomas Quayle, one of the builders of the steamer Neshoto, has been ordered on the survey and to superintend repairs to the vessel at W. Superior, Wis.

Capt. George Simpson, compass adjuster, was in the city Wednesday and reports a fairly brisk season in the adjustment of ship's compasses.

The scow Mariner has been seized by the marshal at Toledo, O., and all claims against her must be filed by October 3. L. G. Richardson, of this port, is proctor for the libelants.

At a meeting of the stockholders of the new Cleveland-Buffalo Transit Co., on Monday, directors were elected and the officers will be appointed today. The capital stock is $150,000, under an Ohio corporation.

The bodies of all the members of the Minch family, lost in the Western Reserve disaster, have been found. The body of Mrs. Minch was found near the Life Saving station on Sunday and the two children on Friday and Saturday.

The steam barge S. Neff, recently sunk in the outer harbor, has been raised and towed to the head of the old river bed. Great difficulty was experienced in getting her afloat, but her owners, Messrs. James and John Corrigan seldom give up an undertaking once started on.

Capt. N. Bartlett the g. m. a. w. is still to the fore, he is now getting to be a barometrical vessel guager for when shipping is plenty he is as chipper as a two year old, but when there is a scarcity of arrivals his temperature falls below zero.

A swarm of butterflies passed over Superior street on Tuesday afternoon, bound west, whether they were skipping from the cholera germs, locating for the World's Exposition, or maintained their elevation on account of weather conditions, is not known, but it is pronounced a very unusual occurrence.

Excavation and construction work on the enlargement of the Cleveland Dry Dock is progressing satisfactorily to all concerned, and the dock is now assuming a more finished appearance. About two-thirds of the entire work is completed, and a spell of fair dry weather will greatly facilitate operations.

Mr. Louis Scherzinger, the local agent for the Chicago Photo-Gravure Co., is a thorough representative of a house doing business in the "Windy City." No stone is left unturned under which there may be any prestige or ducats for his firm, and the major portion of the recent handsome marine photogravures issued to the lake marine was through the assiduous of attention of Mr. Scherzinger, secured for and by his firm.

The steamer Neshoto, owned by R. R. Rhodes of this port is booked for docking in the American Steel Barge Co's new dry dock at W. Superior, Wis. Although she was loaded with coal the pounding she received on the reef near Keweenaw Point did not prevent her from steaming into Duluth with her own power. Quayle's Sons built a strong faithful steamer when they put together the Neshoto and the record of all their tonnage is equally good.

The crew of the steambarge Vienna, which was sunk in Whitefish Bay Saturday, by collision with the Nipigon, came down on the steamers John Mitchell and Castalia, and made their depositions to Harvey D. Goulder, proctor in admiralty, as to the cause of the wreck. The gist of their statement is that the Vienna had blown one whistle, and the Nipigon had replied with two; and that a single whistle was blown only immediately before the boats came together.

Captain Jerry Green, a lake seamen of half a century's experience, favored THE RECORD office with a pleasant call this week. The Captain has moved from Willoughby, Ohio, back to this port, and will dispose of some of his vessel property during the winter; chatting on lake navigation, he has witnessed the revolution in lake transportation from 3,000 bushel schooners to 3,000 ton steel steamers; a stage of affairs he says, which if prophesied half a century ago, would not only have been subject to ridicule, but would have confined the advocate thereof in the asylum for the care of those who were found furiously *non compos mentis*

Chaplain Jones, of the Floating Bethel, has now nearly completed a quarter of a century's service in his chosen calling and is still well to the fore. It may be that "the hub of the universe" can equal this record, as the good people of Boston have always taken a strong interest in their seamen, and provided moral as well as physical comforts to the class for many years, but in the absence of positive information to the contrary, it may be held that the Chaplain's record of twenty-five years faithful service at this port stands second to no other sky pilots in the world, and it is a pleasure to state that there is lots of good work around him, and in him yet. More power to you Chaplain, and when the eight bell racket summons you to your long watch below, we believe you will be ready with your, Aye, Aye, Sir!

The shipbuilding yards have been somewhat delayed owing to a lack of material, shipments of iron and steel from Pennsylvania being very slow. The Globe Iron Works Co., however, have managed to keep well ahead and the keel is laid for the first of the Buffalo-Duluth passenger steamers, as also the preliminary work for the hull. The steam yacht Comanche will be completed in about four weeks, when, if the St. Lawrence river canals are navigable, she will be taken to the coast. No expense has been spared in the construction and outfit of this elegant yacht, aad in fancy tonnage she represents the highest skill known to the art of marine architecture, and withal, a roomy comfortable sea boat and one in which I venture to say, that under sail or steam, she will be found all there. Should her builders desire to contract, there can be little doubt but that an order for a sister ship will soon be forthcoming after the Comanche gets around on her cruise.

Mr. Woods, representing the firm of John Hall & Co., Ogdensburg, N. Y., was in the city Wednesday and closed a contract with the Cleveland Ship Building Co., for pontooning the steel steam yacht Wadena from Montreal, through the St. Lawrence river canals to the lakes again. The pontoons will be the same ones made when Mr. Robert Wallace, vice-president of the Cleveland Ship Building Co., took the Wadena to the coast, although they have done service since on the lighthouse tenders Lilac and Columbine. The Wadena will arrive at Montreal in about ten days after making an extended cruise from this port to the Mediterranean and northern Europe. During her voyage harbors were visited where the American ensign was never sighted over the hull of a United States vessel before and the handsome little steam yacht returns to the port where she was built with a greater prestige than was ever attained by a lake built vessel. On the cruise her seaworthy qualities and mechanical efficiency were amply tested with a result most flattering to her builders, the Cleveland Ship Building Co.

Send $2.00 to Smith & Swainson, Publishers THE MARINE RECORD, Cleveland, O., for a large photogravure picture of the steel steamer "Western Reserve." Size 22 x 28 inches.

THE WEEK'S MARINE NEWS AT CHICAGO.

Special Correspondence to The Marine Record.

CHICAGO, ILLS.—Flags were placed at half-mast at the shipchandlers and on a large number of vessels at this port on receipt of the news of the death of Captain P. Kenny, at Buffalo last week.

Captain Frank B. Higgie purchased the steambarge Maggie Duncan last Thursday at mortgage sale. The Duncan has been taken off the Ashland trade and will make shorter runs on Lake Michigan and Lake Huron the remainder of the season and will run alone. Her consort, the J. E. Potts, is laid up here and the Keweenaw will be consort to the Schoolcraft.

Saturday last a United States marshal seized the cargo of lumber on the barge J. E. Potts, on a claim made in the United States Court in favor of Frank Clark and the Howard Towing Association. Captain Robertson, master of the barge, was placed in charge of the cargo as custodian. On Monday a detective made his appearance on board the barge and arrested Captain Robertson on a charge of larceny. The property was without a custodian Monday, and it was hinted that the Captain had been arrested to annoy the parties who libeled the cargo. Marshal Hitchcock has placed another custodian in charge.

At Miller Bros. shipyard, the steamers J. R. Langdon, Toltec and Hesper were in dock for repairs to stern bearings. The steamers H. A. Root and Peerless, and tugs Elphicke and Halliday for necessary repairs, the schooners Gracie M. Filer and B. F. Wade for re-calking. The schooner Fanny Neil received a new foremost. The I. T. Co.'s tug John Miner, has received a new pilot house and boiler house.

Stewart H. Moore, boiler inspector, re-inspected the Warrington boiler on the steamer Buena last Thursday and allowed it a steam pressure of 250 lbs. to the square inch.

Grain freights continue steady at 2½ cents on wheat to Buffalo.

A dispatch from Manitowoc of September 19th, states that the tug Morford with the schooner Flying Cloud bound for Chicago arrived there for shelter. The schooner is leaking badly. The steambarge Fayette arrived with a broken plank in her bottom, the result of getting on the rocks. She will go into Burger & Burger's dry dock for repairs.

The Dunham Towing Company are burning hard coal on several of their tugs which do inside towing. The V. O. T. Co. and the I. T. Co., are still trying smoke burning devices, the prepared coke which it is hoped will do away with the smoke, has not yet arrived from Pittsburgh. The city authorities seem determined to victimize the tug owners, last week some cases were heard before Justice Glennon, and the Burlington Railroad Company were fined $5 and costs only in each case for four of their locomotives for offenses against the smoke ordinance, and the fines were suspended, but the Independent Tug Line were fined $50 and costs for their tug John Miner for committing a similar offense and there was no suspension of the fine. The probability is that the railroad company have a bigger political pull in Chicago than the tug company.

The Lake Carriers' Association met Saturday afternoon to discuss the question of delays at railroad bridges. It was stated that the Northwestern, Northern Pacific and Fort Wayne railroad bridges were used for half an hour at a time in switching cars. Frequently cars would be run out on the bridge and remain there a long time as the remainder of the train was being made up. As the use of railroad bridges for switch-yards is not permitted by the War Department the secretary of the association was directed to write to the officials of the various railroad companies calling attention to the delays which steamers encounter at their bridges and requesting that orders be given to remedy the difficulty. If this has no effect, complaint will be made to the War Department.

The steam yacht Buena, Captain Louis J. Larsen, won the "Tribune" cup, valued at $50, as first prize for first-class steam yachts in the Yacht Club races last Saturday afternoon, beating the steam yacht Alcoyne, the only other competitor in that class, by about 25 minutes. The race was over a twenty-seven mile course, which was made by the Buena in 2 hours 35 minutes and 52 seconds. The Buena was built by E. W. Heath, of Benton Harbor, and her machinery and boiler by George Warrington of the Vulcan Iron Works, Chicago. She is 65 feet long, 10 feet beam, is schooner rigged, and is a very handsome, well-built steam yacht. The Buena Park Yacht Club are her owners. The "Graphic" Cup valued at $25 was won by the Wilbur, a first-class steam and a set of colors valued at $15 was won by the "Now-Then," a second-class steam launch. Captains, John Prindirille and James S. Dunham were the judges.

Allison V. Armour owner of the steam yacht Gryphon has challenged the Argo club owners of the steam yacht Argo for a race at a date to be fixed hereafter.

The steam yacht Gryphon, Captain Buscey, had a rather rough experience on Lake Michigan last week. When on her way to this port from Grand Haven, her air pump gave out and her machinery was disabled. She was hove-to for 45 hours, and was picked up by the steamer Seymour Jr., and towed into St. Joseph Thursday afternoon.

President McVittie and constructing engineer Frank E. Kirby, of the Detroit Dry Dock Company, were in the city last Thursday, and held an extended conference with the officers of the Lake Superior Line in regard to the construction of a new passenger steamer. The new

boat will be of steel,275 feet keel, and about 300 feet over all, and 42 feet beam. She is to have first-class accommodations for 300 passengers. It is the intention of the line to run the new steamer between Chicago and Sault Ste. Marie. The cost will be over $250,000. WILLIAMS.

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THE BUFFALO WEEKLY GRIST OF MARINE EVENTS.

Special Correspondence to The Marine Record.

BUFFALO, N. Y.—Worthington & Sill wrote policies to the amount of $30,000 on the steamer Vienna which was sunk in Lake Superior.

Capt. Burton of the Lehigh—Reading steamship, Seneca, has resigned, and his place has been filled by Capt. Driscoll, formerly in the Clyde. Capt. Talbot, of the Robert Parker goes in the Clyde, and G. McKinn, formerly mate of the Saranac, has been appointed master of the Parker.

The schooner Annie M. Peterson belonging to Mitchell Bros. of Oswego was sold last week through Galvin Mallow & Boland, to Chas. Hebard & Sons of Piquaming for about $15,000. The Peterson was built in 1874 formerly owned by Mitchell Bros. of Oswego, N. Y., and rates A. 2 in Inland Lloyds with a valuation of $18.000.

The Union steamer Nyack, has finiseed her season and is uow laid up for the winter.

The Schooner Annie Vought wet 400 bushels of the wheat cargo in last week's blow.

The sidewheel steamer Pearl, which is owned by the Crystal Beach Steamboat Co., is in a fair way to be sold to Chicago parties. Negotiations will probably be concluded this week.

The steamer Olympia lost two blades of her propeller wheel on her way down, and jarred her stern bearings loose. She is being repaired at the Union yard.

The monitor steamer Choctaw made her first appearance at this port last week, and excited cousiderable favorable discussion among vesselmen.

Capt. M. J. Galvin returned home from Chicago last week, where he has been looking after the interests of his steamer Nebraska.

The red can buoy abreast of Strawberry Island, Niagara river, got adrift Monday and lodged over near the Black Rock Lumber docks.

The W. H. Gilcher's wheat cargo weighed out 113,885 bushels, beating the record of the Onoko, by 46 bushels. The Gilcher now carries the broom for big wheat cargoes.

The steamer S. J. Macy reports some wet wheat, nearly 2,000 bushels. It is not learned how so large an amount came to be damaged.

Captains of three vessels have reported seeing masts sticking out of the water near Long Point, Lake Erie, but no one knows to what vessel they belong.

Capt. Noland, of the Northern Wave, has almost recovered from his illness and will take charge of his steamer next trip.

The funeral of Capt. P. J. Kenny was held from the church of the Immaculate Conception last Thursday. A large number of lake men were present, and the eight pall bearers, with one exception, were pioneer lake captains.

While the Lehigh Valley steamer Tacoma was in tow of the tugs Babcock and Davis last Saturday, she ran into the Lehigh Valley ore dock, doing it considerable damage, and twisting her own sterm. Repairs on the boat will cost only about $200.

The Buffalo excursion steamer Vision has arrived safely in New York.

William J. Ziegele, principal owner of the White Line Excursion Company, talks of building a new steamer to be 165 feet in length.

Coal freights opened this week exceedingly active, but relapsed into their normal dullness on Tuesday. The breakiug of the Duluth rate to 25 cents had no weakening effect on Chicago and Milwaukee freights, and tonnage for these ports. Canal freights have reached 4 cents for wheat to New York, but the movement does not show the increase it ought to, under the advance in rate.

A RESUME OF WORK AT THE WEST SUPERIOR SHIPYARD.

Special Correspondence to The Marine Record.

DULUTH, MINN.—The big dry dock of the American Steel Barge Co. at Superior, opposite this city, opened for business on the arrival here of the lake steamship Neshoto, which had suffered disaster on the south shore of the lake. The dock is the largest on the Great Lakes, and is considerably bigger than the docks opened last year at Port Huron, Detroit and Cleveland, which were reported as the largest on the lakes. It is a great excavation in the red clay soil, and is built on piling driven in the bottom. It is 550 feet long over all, and 52 feet wide on the bottom, 90 feet on the water level. As the largest boat built or building on the lakes at present is 377 feet 6 inches over all, it will be seen that this dock will be able to take care of the vessels for some time, though, judging by the way in which the size of the lake ships is increasing, it will not be long before the capacity of even this dock is taxed. There is 15.2 feet water on the sill, and the gateway is 48 feet wide in the clear at the bottom. The gate is an ordinary caisson, with larger filling valves than usual, there being four of them each two feet in diameter. The dock can be filled with water in fifty minutes, and can be emptied in four hours. Its pumps are two centrifugals, capable of throwing 22,000 gallons of water a minute, and are so geared to two direct acting engines that either or both can be connected with both or either pumps at any time. George E. Hartnell, of Cleveland, has constructed the dock for the A. S. B. Co. There has heretofore been no dry dock, (except a small floating one in this city), nearer the head of the lakes than Port Huron, and the lake where the greatest damage has always resulted to the most expensive type of ship has been given over entirely into the hands of lower lake ship-repairers, resulting in needless loss of time and money to vesselmen of the Great Lakes. That it will have work and prove a boon to shipping is to be proven easily at a glance at the lists of lake wrecks and their location, outlined on a wreck chart, such as was recently issued by the U. S. Weather Bureau. The dock will be prepared to do work on both wood and steel vessels. At the yards of the company there are now four boats on the stocks. Of these one is the famous whaleback passenger ship about which so much has been said, but of which an accurate description has never been published. As she now stands this vessel's keel is laid, and a dozen or more ribs or frames have been raised. The boat will not be launched until next spring, when she will go into the World's Fair passenger trade for the summer, a company, composed in part of the builders, having a contract with the Exposition managers to carry people to the Fair Grounds. The boat will be 362 feet over all, and of the regular whaleback type. She will carry a cabin nearly her whole length, with two saloon decks, and arranged for a very large passenger accommodation. This cabin will be set on turrets, like those of the whaleback steamers now afloat, and there will be rows of steel posts along the outer side of the decks down to the hull of the vessel. The freight steamer James H. Colgate, now nearing completion, will be launched September 24. One interesting feature of this vessel is the fact that her machinery, screw, etc., were built in a Duluth shop, further west than any such machinery was ever made before. The engine is of a little over 1,000 horse-power. The yard number of the Colgate is 121. Two barges, Nos. 126 and 127 are under way, and will be out this fall, they are of about 3,000 tons capacity each. These vessels will be also built on a new plan for whalebacks, they are to be fitted especially for the flour trade, a class of business that the Steel Barge Company has not yet invaded. That they will cut into the flour trade, as they have the wheat, is certain, especially as they will be well fitted to handle cargoes, being built, as they are, particularly for one class of traffic. That the flour trade of the lakes is worth striving for is evidenced from the fact that there was shipped out of Duluth last season 3,000,000 barrels of that commodity, and from other ports, Chicago, Milwaukee, Gladstone, Washburn and the rest, more than as much more. This total is increasing rapidly, and by another year Duluth alone will manufacture 2,000,000 barrels, which will all be shipped by water.

The fair-sized boom that is starting in the construction of modern steam passenger ships on the lakes for the Duluth business is looked on with joy here. Now comes the statement that the Lake Michigan and Lake Superior Transportation Company, which has been for years in the passenger business between Chicago and Duluth, will build three $250,000 steel passenger boats, to carry 300 first cabin passengers, and is to have the first of them ready next spring, and the rest as soon thereafter as possible. These boats, with the Great Northern's flyers, and the Barge company's passenger whalebacks, will give the lakes as fine vessels for the accommodation of people as they now have for the carriage of wheat, and coal, and ore.

The disabled Neshoto arrived here Monday, and unloaded her cargo at the Ohio dock. She will get into drydock Tuesday.

Ore shipments are still large, last week having sent out from Two Harbor's docks 50,800 tons. Of this the Chandler shipped 29,500 tons, the Minnesota 19,500, and the Zenith 2,000. There is no indication of a let-up in shipments. Rates are firm at $1.10, though wheat business is light. Wheat shipments are small now, and the increase of stocks in store here for the past week has been 503,000 bushels. Total stocks now are 2,000,000 bushels. Grain is not yet coming in as fast as had been expected, but better receipts are looked for. Wheat freights are still 3¼ cents, but are likely to go higher.

Capt. Denny Sullivan, representing the insurance companies who got the vessel off the rocks at Keweenaw Point, reports considerable damage, but just how much he cannot say till she is dry docked. She made a good deal of water coming up.

It is now thought that the first carloads of ore will be out of the Mesaba in two weeks, but the docks will not be ready by that time, nor the tracks to them.

Send $2.00 to Smith & Swainson, Publishers THE MARINE RECORD, Cleveland, O., for a large photogravure picture of the steel steamer "Western Reserve." Size 22 x 28 inches.

THE BAY CITY BUDGET.

Special Correspondence to The Marine Record.

BAY CITY, MICH.—Capt. James Davidson is in Chicago on a business trip.

Capt. John Robertson and Frank Vanliew of Port Huron, inspectors of hulls for this district are in the city on business connected with their office.

Alex. Barcey, foreman of the Marine Railway, died very suddenly last week. He was 55 years of age, and leaves a grown up family. He was well known in local marine circles.

Light-ship number 53 made a trial trip, with Hon. F. W. Wheeler in charge, out past the can buoy. Everything worked like a charm.

Work at the dry dock keeps up pretty well. The tugs Acme and Winslow have been in for repairs, the barge Eliza is in for recalking and the barge Journeyman which was in collision with a steamer on the St. Clair river on her way up, and had her bow stove in, goes in for a rebuild. She is now unloading her cargo of stone at the 24th street dock. Bay City has a competitor in ship-building in a yard at Sebewaing, which has built and launched a barge at that point for Clifford Brooks and a Detroit gentleman. She will be brought to this port for her machinery. The National Boiler Works have built her boiler which is 11 feet long by 6 feet in diameter, tested to a pressure of 140 pounds. Owing to the shallowness of the water at Sebewaing, no tug has yet been secured of such light draft that it can bring her here, which will necessitate dredging a channel for her. The same firm have also built and put in position a new boiler in the tug Haight.

The steel tug building at Wheeler & Co's yard for New Orleans parties, is about completed. Her dimensions are 110 feet long 23 feet beam and 11 feet deep, registered 150 net tons.

The tugs Sweepstakes and Ella Smith got caught in the blow last week, and owing to a break in the machinery of the former had to let go of a raft of logs containing 3,000,000 feet for Fisher & Turner of this port. It was picked up again about 30 miles of Oscoda in as good condition as when it was let go. The wind being from the north west it had been drifting toward its destination. It is expected in today.

T. Hubbell & Co. of Detroit have been awarded the contract for deepening the channel of the Saginaw river between Melbourne and Saginaw, and the channel on the west side of the middle ground. Their bid for the former was $40,000 and for the latter $5,000. The contract for the work at the mouth of the river has been let to E. Hall also of Detroit. The latter gentleman will set three dredges at work immediately so that a good start can be made this fall. His bid approximates $55,000, so that the whole appropriation will be used up.

The last of the big three, the City of Naples, was launched from Davidson's yard on the 17th inst. Her dimensions are the same as the City of Genoa and the City of Venice. She is 326 feet in length, and is furnished with all the improvements in the way of steam steering and hoisting apparatus. Her gross tonnage is 2,109; net 1,772. There are still four boats on the stocks, three of which are schooners, and which are known as Nos. 52, 53 and 54, and a large tug which is nearly completed and will be launched next week. J. P. R.

A NEW TUG TO BE BUILT.

The Independent Tug Line, of Chicago, has contracted with E. W. Heath, the Benton Harbor shipbuilder, for the construction of a new tug, to be used in Chicago River towing. Her cost will be about $11,000. She will be 85 feet long, 19 feet wide, and will draw 10 feet 6 inches. She will have two engines high pressure, 20x22 inches on one shaft, supplied with steam from a boiler to carry 148 pounds of steam to the square inch. The new tug will also have a wheel nine feet in diameter, and will be equipped with a steam steering gear. She is to be built with special reference to the difficulties of Chicago River towing and will be completed in about four months.

LIGHT-SHIPS FOR THE GREAT LAKES.—NEW AIDS TO NAVIGATION TO BE LOCATED.

Buffalo is interested in the proper location of six light-ships, whose position on the lakes has not been fixed by Congress, but is left to the discretion of the Lighthouse Board. One of these ships, in the opinion of Buffalo members of the Lake Carriers' Association, should be located at Poe's Reef, in the Straits of Mackinac.

Secretary Charles H. Keep, of the Lake Carriers' Association, explains the situation as follows: "By the Sundry Civil Appropriation bill, eight light-ships were authorized by the last Congress. Two of these were to be stationed at the Limekiln Crossing, in Detroit river, to take the place of the two private lights now maintained there by the Lake Carriers' Association. In addition, three small light-ships were authorized to be built for Detroit river. These the Lighthouse Board has offered to locate at any convenient points that may be agreed upon. Furthermore, a sum of $60,000 was appropriated for a lighthouse on Eleven Foot Shoal, Green Bay, but this being insufficient for the purpose intended was made available for the purchase of lightships.

Three more light-ships can be built with this money and their location on the lakes will also be made by the Board to meet the convenience of the Lake Carriers. There are therefore six light-ships in all whose location has not been determined by Congress. The Lighthouse Board has made an order that the three Inspectors of the three lake lighthouse districts act together as a board to determine the location of these six light-ships. The Lighthouse Board has directed the Board of Inspectors to confer with the Lake Carriers' Association, which has appointed a committee of three, consisting of George P. McKay, James Corrigan and Harvey D. Goulder, of Cleveland, to meet the Board of Inspectors and confer with them about the location of the six light-ships. Nearly all of the Buffalo members of the Association have signed a request that one of the light-ships be located at Poe's Reef, in the Straits of Mackinac.

It has been urged and proposed that of the three Green Bay light-ships one should be located on Eleven Foot Shoal, the second opposite Poverty Passage, and the third on Driscoe Shoal. In regard to the latter the Buffalo members prefer Poe's Reef as being the more important point to guard. The reasons adduced are: (1) Because there have been a great many more disasters there; (2) because even the tonnage that comes out of Green Bay, nearly all of it passes nearer to Poe's Reef than to Driscoe Shoal; and (3) because the immense tonnage from Chicago and Milwaukee could not be benefitted at all by a light-ship at Driscoe Shoal, but would be much benefitted by one at Poe's Reef.

If one of the Detroit light-ships is placed on Ballard's Reef in Detroit river, as is probable, there will remain nowhere on the American shore, or in the waters of the lakes and connecting rivers, any lights maintained by the Lake Carriers' Association. The only lights after this season maintained by private subscription, will be those located on Canadian soil, where they will be beyond the jurisdiction of our Government. The cost of maintaining private lights will then be less than half what it has been for several years.

The Lake Carriers' Association transacts its business through its standing committees appointed at the beginning of the year. The committee having this matter in charge is the committee on aids to navigation, which has appointed the sub-committee referred to.

It will no doubt be of interest to add that THE RECORD man interviewed vessel men at Detroit and Cleveland, and finds that this third light-ship, if only three are built from the appropriation of $60,000 originally intended for the construction of a lighthouse at Pt. Peninsula, is, that one should be placed at Pt. Peninsula, the second at Poverty Passage, and the third at the foot of Lake Huron, in the vicinity of Corsica and Northwest Shoals. This third light-ship is really the only one in question and several Cleveland vessel owners favor the location at the foot of Lake Huron, as being of the greatest value to the general commerce of the lakes, notwithstanding the fact that Buffalo owners urgently petition for the location of this third light-ship on Poe's Reef, a very dangerous obstruction bearing southeasterly from Bois Blanc Island, in the Straits of Mackinac. Green Bay traders hold that as the original appropriation of $60,000 was for an aid in that locality, the amount, if used for 3 or 4 light-ships, should still be held in that district, and in support of this view point out that legislation is now pending for a light-ship on Poe's Reef, and that they have Peshtigo, Whaleback and Driscoe Shoals to light.

The sum total of this eagerness to establish a light-ship, points out very clearly the number of places where aids to navigation are considered not only essential, but necessary, for the safety of lake commerce, and wherever the third light-ship is placed, it will clearly fulfill its entire duty, though it is certain that unless four light-ships are built for the $60,000, either the foot of Lake Huron or Poe's Reef will have to be neglected for the time being; and in any case, the Green Bay commerce can not obtain all they desire at this time.

Referring to pending legislation in which lake carriers are interested, Mr. Keep says: "Our committee on legislation, which has its headquarters in Buffalo, has not had any meeting lately, but will have to consider some matters with reference to navigation before the next Congress gets together. Among these is a bill now pending in Congress forbidding water carriers from inserting any limitations of their common law liability in their bills of lading.

"Another matter that has to be put in shape for introduction in the form of a bill before Congress is the matter of regulating the size and manner of towning rafts on the lakes. It is probable that a bill will be prepared directing the Secretary of War to appoint a competent board of engineers to examine the whole question of raft-towing on the lakes and report to Congress what restrictions, if any, should be placed on the size of rafts passing through the connecting rivers of the lakes, and what regulations in addition to the existing law may be called for as regards towing and lighting rafts."

MAGNOLIA METAL.

A most pronounced mechanical success has been attained by the Magnolia Metal as it is learned that "the sales of the composition for the year 1891 were about 22 ½ times as great as the combined sales for 1886 and 1887; and the sales for 1892, from present indications, will exceed thirty times the business done during years 1886 and 1887."

Mechanics are eminently practical men, and an article of this kind cannot be juggled into success, but must pass the trying ordeal of hard every day use. If it possesses unique qualities they will certainly be found out and appreciated; but if the article does not possess value, no amount of persuasion can change an opinion fairly formed after an unbiassed trial.

There is an unquestionable appreciation of this fine metal and the manufacturers claim that Magnolia Metal is the best metal that has ever been devised for Steamship, Railroad, Dynamo, Rolling Mill, High-speed and Heavy Engine, Saw Mill, Cotton Mill, Paper Mill and for every other class of mechanical bearings, and the enormous trade in this commodity that has been developed during the few years since this metal was first put on the market seems to be a logical confirmation of their claims.

THE STEAMER VIENNA SUNK BY COLLISION.

The steamer Vienna, Capt. J. W. Nicholson, went down in 60 fathoms of water near Whitefish Point last Friday night, the result of a collision with the steambarge Nipigon. The Vienna, with the Mattie C. Bell in tow, was bound down, laden with ore from Marquette. The Nipigon, towing the schooners Melbourne and Deleware, was bound up. The weather was fair and the night clear. As the two steamers met four miles this side of Whitefish Point both whistled for the port side. They seemed to be passing all right, but at the last moment it was seen that a collision was inevitable, the Nipigon striking the Vienna on the port side. The Nipigon's stem and fore foot were badly crushed, but she was not leaking much. The Vienna, however, had received serious damage. Both steamers at once dropped their consorts and the Nipigon towed the Vienna towards the shore. When within a mile of shoal water, after being towed for an hour, the Vienna sunk. Her crew were all saved, together with their effects. The cause of the collision is not yet known, though it is claimed that cross whistles are again responsible for this casualty as well as so many others of recent date. The Vienna was owned by the Orient Transportation Company of Cleveland, and was valued at $46,000, and was insured to the amount of $44,000, divided as follows: Commercial Union, $14,000; St. Paul, Greenwich, Detroit Fire and Marine, Michigan Fire and Marine, North America and London, $5,000 each.

WATER TUBE BOILERS.

Water tube boilers are rapidly encroaching upon the field so long held by the fire tube boilers, and every year sees some new type put on the market. It surprises even those who are supposed to know what is going on to see the aggregate horse power of water tube boilers installed within five years. The maker of a water tube boiler which was practically unknown five years ago, has, within this period, sold nearly 500 boilers, from ten horse power up to twelve hundred horse power each. Other companies have not sold so many, but they have sold a great many, and if the demand continues, as it undoubtedly will, the water tube boiler will be practically the only one in use. Water tube boilers are not confined to any special duty, but are to be found in all kinds of work on land and sea, and the rapidity with which they are coming into service is worth this brief mention.—*Engineer, New York.*

A RECENT LAKE BUILT SCHOONER.

[ILLUSTRATED.]

The large photogravure of the schooner John C. Fitzpatrick, which THE MARINE RECORD issues in supplement form this week, is reproduced by the Chicago Photo-Gravure Co. from an oil painting exclusively for THE MARINE RECORD, and is an exact picture of the vessel under canvas.

There has been a large number of steamboat engravings issued from time to time, but the sailing tonnage has been somewhat ignored, so that we take pleasure in placing before our readers a representation of the latest vessel built for sailing and towing purposes.

The John C. Fitzpatrick was built by F. W. Wheeler & Co., of West Bay City, to the order of the Cleveland vessel owner whose portrait and synopsis of career is contained in our current issue. Her dimensions are 256 feet over all, 242 feet keel, 39 feet 6 inches beam, and 18 feet 1 inch depth of hold. To support these dimensions, in the hardest trade on the lakes, viz.: carrying iron ore, we find that her main keel, keelson, rider and sister keelsons are of first quality oak timber, 14 by 14 inches, and the latter 14 by 10½ inches through bolted, and as firm as timber can be joined together. In addition to this are heavy steel plates, 24 by ¾ inch, given a liberal lap, and through-bolted on each side of the keelson. Her frames are diagonal strapped, run at an angle of 45 degrees, extending from the covering board to the heads of the floor timbers, and fastened in every frame, which are doubled by 6-inch flitches, 22 inch centers. A heavy steel strap is bolted around the vessel on head of frames, and diagonals, besides a steel arch or cord runs along on each side the whole length of the hull. The garboard strakes are of 6-inch oak, doubled on each side. The bottom planking is of long first quality oak, 5 inches thick, increasing to 6 inches at the turn of the bilges, and continuing up to the rail with 5-inch planking well fastened by being through bolted and clinched.

Her deck fittings, to which much attention was paid, shows eight hatchways with 24 feet centers, a commodious after house, fitted inside with a fine hardwood finish and every convenience for crew and a limited number of passengers. She also carries the Providence steam windlass and steam capstans manufactured by the American Ship Windlass Co., of Providence, R. I., deck engines, steam pumps and every modern facility for the speedy handling of ship and cargo.

The Fitzpatrick has proved herself a large carrier as the record of her first cargoes show 2,396 tons on a 16.8 feet draft of water. The easy handling, large carrying capacity and generally economy found in the handling of this new schooner has no doubt had its weight in the placing of another contract with the builders, Mr. Colin McLachlan, of Port Huron, having just contracted for a new vessel on the same lines.

PUMPING OUT LAKE ANGELINE.

Lake Angeline, within the city limits of Ishpeming, Mich., is a bowl shaped lake a mile long and half a mile wide and about forty feet deep, situated about 1,000 feet above the level of Lake Superior and three miles inland. The lake formerly furnished a water supply to the town of Ishpeming and the characteristic of the country is broken and hilly, but, notwithstanding this, the water supply for 15,000 inhabitants is now pumped from Lake Superior.

Iron ore mining has been extensively carried on in the vicinity of Lake Angeline, and it having been found, through the process of diamond drill explorations, that very rich veins of iron ore existed under the bed of the lake, under which the surrounding mines have been extended for a short distance, the mining companies owning the adjacent mines, feeling insecure while prosecuting work, decided to pump the lake dry, and accordingly an immense rotary pump was placed in position and has been at work for six weeks discharging a stream of water 22 inches in diameter, equal to 20,000 gallons of water a minute. It is now expected that another month will complete the pumping out work and leave the basin dry, when only a small plant will be necessary to pump out the rainfall. The mining experts already know the amount of ore beneath the lake, and they say that the area under the lake will pan out for fifty years.

Simon Ingersoll of Stamford, Conn. has recently perfected an invention which he calls a friction reducer. The object is to reduce the friction of propeller shafts to a minimum. His invention is similar to the ball bearings on bicycles, which reduces the friction to an imperceptible fraction, but in his reducer, instead of using balls, his bearings are small wheels, through which the shaft runs. In an experimental trial of the reducer on a small scale, it was found that one-third more speed was attained with the same consumption of coal, and the working of the invention was in every way satisfactory.

ST. MARY'S FALLS CANAL.

The recent St. Mary's Falls canal toll proclamation issued by President Harrison in response to a wide-spread feeling among vessel-owners, shippers and brokers, that United States' tonnage was discriminated against, by the Dominion government in the matter of Welland Canal tolls, brings more forcibly before the public the location and importance of the huge artificial water-way connecting Lake Superior with Lakes Michigan, Huron and Erie.

In view of the interest manifested at this time we reproduce in these columns cuts of the St. Mary's Falls Canal, showing the continual mode of traffic carried on that point throughout the season of lake navigation, through the courtesy of the *Rolling Mill* of Buffalo, a journal devoted to milling and mechanics, we are enabled to present these views to the readers of THE RECORD as also the gist of the article referring to the history and construction of the United States canal.

VESSELS ENTERING THE LOCKS FROM BELOW.

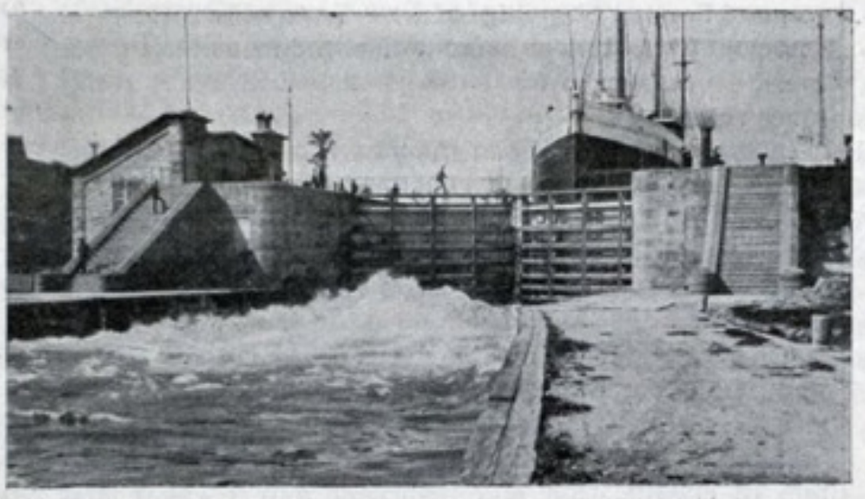
"The importance of securing a ship canal around the rapids of Sault Ste. Marie was first brought to notice by Governor Mason in his annual message to the first legislature of Michigan. That body, acting on his recommendation, passed the same year with his approval, an act authorizing and providing for a preliminary survey together with an estimate of the cost of construction. This work was intrusted to John Almy, engineer, who reported plans for a canal 75 feet wide and 10 feet deep, and two locks each 32 feet wide, 100 feet long and 10 feet deep; the estimate cost being $112,544. In the following year the legislature made an appropriation for beginning the work of construction, and early in 1839 the contractors commenced operations by filling up a government mill-race located on the military reservation. To this action the government objected; and the contractors persisting, a detachment of troops was ordered to the scene and the work summarily stopped. Years of controversy ensued, during which repeated efforts were made, though without success, to interest the government in the project. Meantime the growth of population and commerce and the development of agriculture and mineral wealth in the country of the Great Lakes, and particularly, about Lake Superior, made more and more apparent the need of a ship canal at the Sault. Finally, therefore in 1852, Congress was induced to aid by voting a land grant of 750,000 acres, and in the following year the St. Mary's Falls Ship Canal Co. was organized under the laws of the State of New York, and ground again broken for the great work. The plans, as modified, were for two consecutive locks, each 350 feet long, 70 feet wide and 13 feet deep, with a canal 100 feet in width, the estimated cost being $547,-739. On the 21st of May, 1853, a certificate of the completion of the work was filed in the State land office, the ground originally in controversy having meanwhile been ceded by the general government. Water was first let into the canal of April 19, 1855, and on the 18th of June following the first boat passed through. The traffic of the canal grew rapidly, and soon became enormous, increasing from 106,296 tons in the first year to 9,041,213 in 1890. The figure for 1891 was, from temporary causes, reduced to 8,888,759 tons. The principal items of freight are coal, flour, grain, ore, lumber and salt.

"St. Mary's river, which is nearly a mile wide at this point falls 17½ feet in three-quarters of a mile. Its discharge of water has been estimated at 90,780 cubic feet a second, and its horse power at 725,000. There are no serious natural obstacles in the way of developing this enormous power. A ledge of rock, coming to the surface of the ground at the head of the rapids and running at right angles to the river, back to the highlands, makes it safe and practicable to cut a canal from a point in the river above the rapids to a point below. Such a canal would, for various reasons, have to be about three miles long."

In addition to the foregoing particulars, the construction of a new and larger lock is in progress, taking the site occupied by the two old locks built in 1855, the canal itself being deepened to correspond, so as to give a navigable depth of 20 feet. The dimensions of the new lock will be—length 800 feet between gates, width 100 feet throughout, with 21 feet of water on the sills, with a single lift, approximating 18 feet. The estimated cost of this new lock and work of canal deepening is set down at $4,738,865. For the fiscal year ending on the 30th June, 1893, an additional sum of $2,000,000 can, it is stated, be profitably expended, in view of the importance of completing the work at the earliest possible date, the enormous traffic being now dependent on a single lock.

In connection with the enlargement of this canal, there has been undertaken, and is in progress, the work of improving the southern channel of the river below the falls, known as the Hay Lake Channel in United States waters. It is proposed to make a channel of 300 feet wide, and of a navigable depth of 20 feet. The improved route will leave the present navigable channel of the river at a point Sugar Island Rapids, about 2½ miles below the canal; will pass through these into Hay Lake; then by way of Middle Neebish; rejoining the present navigable channel at the foot of Sugar Island; saving a distance of 11 miles (16 miles in place of 27), and giving a route which can be so marked by lights as to be navigable at night, an advantage which is not to be afforded by the present channel, except by the use of many lights. The estimated cost of the work is set down in the report of the U. S. engineers, quoted at $2,659,115.

The Dominion government has also entered into the construction of a large canal and it is being rapidly constructed through St. Mary's Island, on the north side of the rapids. At ordinary stages of the river water, there is a difference of 18 feet in the levels of the water above and below this island. The length of the canal across the island is 3,500 feet. A considerable amount of excavation is required to form channels of approach, both at the upper and at the lower entrances. The total length of this canal and its approaches will be about 18,100 feet. The plans for the Dominion canal, after several modifications and radical changes, are as follows: Length of chamber, 900 feet; width of chamber, 60 feet; gate width 60 feet; depth of water on the sills, 19 feet at the lowest recorded water level. This depth, though calculated on a different basis (extreme low instead of "mean" water level), is intended to be the equivalent of the depth, 21 feet, of the new American lock now under construction. By the scheme as so modified, accommodation will be afforded to three vessels lying in the lock, one behind the other, one of the lake type 320 feet long, and two of the Welland canal type, 255 feet long, with ready means of entrance and exit on a course through the gates and lock straight with the line of the canal. The canal proper will have a width at low water level of 152 feet, and a bottom width of 145 feet. The depth will be made suitable to navigation at mean water level by vessels drawing 20 feet, and the gates will be worked either by hydraulic power or by electricity.



THE GATES CLOSED AND THE WATER RUSHING OUT.

The London Board of Trade has awarded a gold watch to Capt. Rivers, of the American ship A. G. Ropes; gold medals to Messrs. Graham and Lawrence, second and third mates, and silver medals to others of the ship's crew, for rescuing the crew of the British bark Glanperis, off Cape Horn.

COMPRESSED AIR SYSTEM AS A MEANS OF PROPULSION FOR STEAMERS.

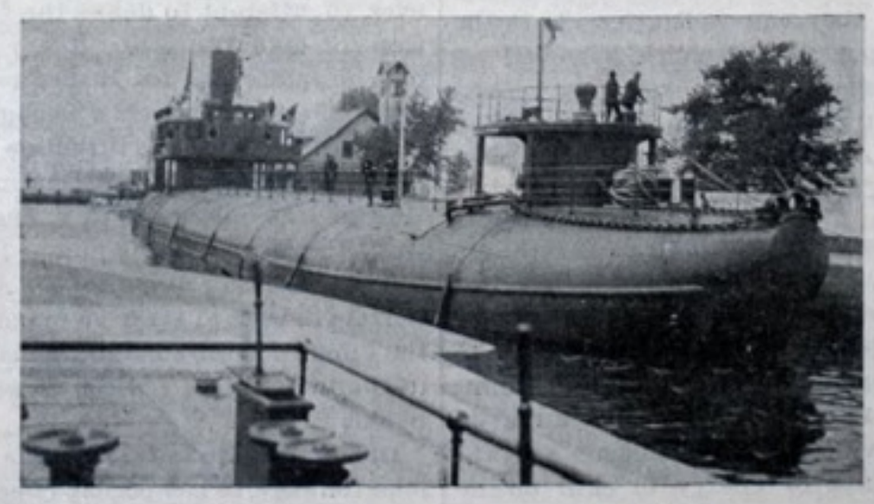
There is now a gentleman who has formerly been connected with the Peninsular and Oriental Line of steamers, engaged in developing and economical system of propelling steamers by the compressed air system.

This Mr. Stewart, who is at present perfecting his mechanism at a small port on Lake Michigan, has interested several capitalists, among whom are lake shipbuilders and shipowners in his demonstrable inventions, full and complete particulars of which will be given out for publication at an early date.

Mr. Stewart is not alone in his researches in the science of compressed air as a means of propulsion or for the transmission and distribution of power. Nabor Soliani of the Italian admiralty, has recently contributed some valuable *data* on the same subject which has been translated by English shipbuilders and published in *The Shipping World*. This authority ably treats of the several systems in use on modern ships, devoting considerable space to the description and transmission of steam power by water at high pressure commonly called the hydraulic system, by electricity, and the compressed air system. In summing up the advantages of the several powers for marine uses, Mr. Soliani concludes that whether for the weight, cost, or space taken, direct transmission by steam stands first. The electric and compressed air system comes next, while the hydraulic, which requires greater weight and cost, comes last. The direct steam system is, because of its efficiency, regularity and steadiness of action, economy in weight, space and cost, the most suitable, consequently, in the majority of cases it is the most preferable, but admitting that, for special reasons it may be found expedient, to make use of one of the other systems of power transmission, though it is held that steam being the first source of power, it may be sustained as the proper one to use; for all machinery forming an integral part of the apparatus of the ship and necessarily for its action. This machinery consisting of the circulating, feed and air pumps, the starting gear, and generally speaking all machinery in the engine and boiler rooms. Yet, in case compressed air should be used on board ship as a means of power transmission and distribution, Mr. Soliani holds that it would be much better than to use electricity, which is only adapted for working rapid firing guns on a naval vessel and the electric light plant, while the compressed air system can be used advantageously for pumps, torpedo service, steering gear, capstans, dynamo, forced draft and ventilating engines, besides for several other auxiliary uses, in short the system is simple and easily put into actual practice on board vessels of which the working machinery is now adapted for the use of steam, it being only necessary to use a different gas more suitable than steam. The use of compressed air is therefore of very wide application on board ship, compressed air is eminently well adapted to move the engines of dynamo—electric machines, which are, as a rule, placed in closed compartments and requires a cold temperature. And the same power would be of equal benefit in its application to all machinery on deck, where steam is liable to condensation. The application of compressed air on an extensive scale was first used in Italy by the Italian Engineer Sommeiller for the perforation works of Mont Cenis.

Prof. Riedler also brought the system to a high degree of economy, and it has been used for piercing the St. Gothard tunnel as well for contributory power to private houses in Paris and Manchester by the Popp system of use.

It is evident therefore that a much wider adaptability awaits the inventor who delves deep into the science of transmitting power by the aid of compressed air, and it is possible that instead of hydraulic machinery being the coming factor in the method of propelling vessels, compressed air may step in and discount to a large extent even the positive and efficient agency now in use.



A "WHALEBACK" IN THE CANAL.

Send $2.00 to Smith & Swainson, Publishers THE MARINE RECORD, Cleveland, O., for a large photo-gravure picture of the steel steamer "Western Reserve." Size 22 x 28 inches.

The Marine Record,

ESTABLISHED 1878.

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CLEVELAND, O., SEPTEMBER 22, 1892.

IN view of the cholera scare, lake ports have taken energetic and well advised action in the matter of enforcing quarantine regulations. The yellow flag, symbol of the letter Q in the code of signals, is now becoming more generally known. Vessels are not waited for or asked to fly the signal intimating to the port officer that there is sickness aboard, but they are required to slow down and stop when the medical officer gets alongside in a tug flying the ensign aft and the letter Q or quarantine flag forward. All lake ports should embody quarantine regulations in their city ordinances and not wait for special action to be taken in each case of impending danger.

SEVERAL interviews have recently been held with prominent iron and steel shipbuilders regarding the rating of lake-built steamers on the classification books of any universally known society, and all are in favor of such a course being adopted in the future. Mr. John F Pankhurst, vice-president and general manager of the Globe Iron Works Co., is heartily in favor of such a procedure, and recently stated to THE RECORD man as follows: "I am pleased to go on record as advocating a system of classification and inspection for iron and steel lake built ships, such as is customary in all other portions of the world. Our lake tonnage has now arrived at such a stage of importance where an original class and periodical inspection surveys are a necessity to keep up the efficiency of the high classed tonnage." In this connection it is well to remember that the builders construct, the owners sail, and the underwriters insure, each at their own discretion.

ANOTHER canal project is now taking a fresh grip, although it has been suggested before. The most recent proposal is to construct a ship canal from Lake St. Clair to Lake Erie, a distance of 11 miles. Such a canal would save a distance of about 80 miles, and would enable vessels to avoid not only the intricate navigation of the Detroit River, but also all the shoal ground to the westward of Pt. Pelee on Lake Erie. The route would be through Canadian territory, starting from the mouth of the Thames River in the southeast portion of Lake St. Clair and running through to Dealtown on Lake Erie. It is not probable, however, that the Dominion Government would entertain the project at this time, as with the improvements of the St. Lawrence River Canals and the construction of the new locks at Sault Ste. Marie, the Canadians have all that they can well attend to in the matter of canals. A glance at the chart, however, reveals even a more advantageous route over these eleven miles than the route suggested from Georgian Bay through Lake Simcoe to Lake Ontario.

THE United States government, through its several departments of naval, revenue marine, lighthouse, life-saving and weather bureau service ably subserves the commerce of the lakes, and their log books teem with the daily records of acts of heroism, forewarnings and voluntary services opportunely rendered. With such an array of safeguards already provided by a munificent government, there should be no lack of energy or skill on the part of the men who are most interested in seeing that every precaution and provision is made for their own safety, in the event of circumstances over which they have no control, placing them in a position where, as the maxim states, "God helps those who help themselves." It is the duty of the men who gain their livelihood by sailing to always have an alternative, or resource, in an extremity, and this feature of the profession can best be attended to previous to the hour of need. The sailing community, for whom these remarks are intended, will aptly realize the trend of the safeguards suggested and should have handy and ready for instant service a full and complete equipment of well-tested stand-by resources.

CLASSIFICATION AND INSURANCE OF LAKE VESSELS.

The brief editorial contained in our issue of the 15th instant, under a caption of "The Classification of Lake Steamers," has awakened the interests of classification societies, owners, builders and insurance companies to a better understanding of the necessity of doing business in a more orthodox manner than has hitherto obtained on the Great Lakes.

We do not assume that the article printed in our last issue has had the immediate influence of bringing about such a righteous innovation, but we do assert that a knowledge of the signs of the times, and the requirements of the service, constrained us to herald in advance that, which sooner or later, will become the universally acknowledged basis under which the important tonnage of the lakes will carry on the commerce of the northwest.

In furtherance of these views, it is now learned, that officers of the United States Standard Steamship Owners', Builders' and Underwriters' Association, Ld., having their head offices in New York, are out with invitations to the insurance companies engaged in lake business, to form a coalition or convention to be held in Detroit on the 28th instant, for the definite purpose of discussing the merits and introduction of the above named association's system of inspection and classification for lake vessels, at which time it is expected that all possible information relating to the rates and usages of this and other associations will be furnished those interested.

Judging from the foregoing, it is apparent that the enormous lake interests are commanding the attention of at least one bureau of inspection and classification, and when it is remembered that in a previous issue of THE MARINE RECORD, we exclusively announced the fact that the Bureau Veritas, an institution known all over the world, had established a lake department under the charge of a thoroughly competent official with head-quarters at Chicago, and that agents would in the near future be appointed at all of the principal lake ports, there is ample reason to believe that still other classification societies, and especially the well-known "Record of American and Foreign Shipping" of New York, will also come to the front by holding out commercial inducements for the marine interests to make use of their universally recognized rules.

In so far as the action of the past few years would indicate, it is now apparent that the change from wood to iron and steel ships has brought about an entire revulsion as it were in the old time methods of transacting business, as well in commercial as on transportation lines of procedure. There can be no doubt but that Inland Lloyd's was sufficient for the needs of the lake marine in its infancy; but the present demands some more inclusive, technical and comprehensive system of meeting the needs of modern business transactions, in short, the system of classification and insurance now in vogue, may easily be conceded as being distinctly behind the times, and that it must in the near future give way to one of a wider adaptability. The best evidence of the foregoing fact, is contained in the feature of foreign insurance, which has crept into the lake business during the past few years.

It is well known that more or less dissatisfaction has been expressed by owners, and even underwriters, on account of the present' system, and it seemed touch and go last spring, whether the Inland Lloyds would issue their classification or not for this year. In the event of a similar wavering in the spring of '93 neither hull nor cargo insurances could be placed on even the present terms for certain classed tonnage. It is too early, however, to attempt to define the future system of classification for lake tonnage. Every maritime nation has its own special rules for inspection and classification, but there are three bureaus recognized in the commercial marts of the world as infallible guides of a ship's worthiness. These are: the system in use in England (London Lloyds), the one in use in France (Bureau Veritas), and the "Record of American and Foreign Shipping," issued by the American Shipmasters' Association, of New York. Certain classes of trade demand a rating in either one or the other of these three bureaus, and it is by no means uncommon to find vessels classed in each of the three books.

In so far as Inland Lloyds is concerned with modern lake tonnage, it has perhaps been looked upon as simply a foundation on which the annual lake insurance tariff could be based, but the rapid advance made by the lake marine has placed underwriting on a far different footing, and it is more than probable that another year will see, not what is called a Uniform Lake Tariff; but that the lake underwriting will be conducted similar to coast and ocean practice, viz., treating each risk by itself. True, it might be said that business is done so hurriedly at the beginning of the season that it would be impracticable to consider each risk as it is presented. This reasoning might have had weight years ago, but not at the present time, as negotiations for the underwriting of all risks can be carried on during the cessation of lake navigation, and there can be no doubt but that such is the proper way to conduct the business of marine underwriting; at least we find no opponents among those with whom the subject has been canvassed.

Again, many owners of vessels have felt that they were suffering a hardship in paying a rate arbitrarily placed upon them; and this is, no doubt, to some extent true, and could best be remedied by treating each risk individually.

It is, however, needless to enlarge on this particular point, but still it will be brought forcibly to the minds of many owners forced to pay an arbitrary rate, feeling, and rightfully, too, that the rate of insurance on their vessels has been too high, as their ships were, and are, well manned, well found and kept up, so that in the event of a casualty, expenses would be kept at a minimum for repairs. In such cases the risks are no doubt eagerly sought after by the underwriters, who look upon the premiums from such a source as practically clear profit. Owners, then, are not to be blamed for feeling that they are obliged to pay an extra premium, so that insurance companies may get out even, as it were, on risks not quite so desirable; and yet there are many instances where such cases exist, and they are perhaps known to the underwriters in their vernacular as "a good class of people to do business with."

To come back to the classification feature of lake tonnage, we desire to say that there is one point which the representatives of marine insurance companies should thoroughly consider at this meeting, and that is that no system, unless it is universally adopted, is feasible. The rock of limited tonnage, exclusive special class, or other systems, worked in as a side issue, has already split several excellent combinations, and in view of our knowledge of these former experiences, we await the result of the Detroit meeting, the first of its kind to be held on the lakes, with some degree of attention. It is also probable that this is but the first of similar overtures that will be made by other classification bureaus, and even in the event of no particular plan or system being adopted at this convention, it is certain that some ideas may be evolved that will result in the improvement of the present order of rules, which owners and insurance companies alike feel has now become useless for the purposes for which they were organized.

FOR A LIGHT ON SQUAW ISLAND.

To aid in the navigation of the north end of Lake Michigan a lighthouse has been erected on Squaw Island, and it is now ready for lighting. This aid is directly in the path, or course, of all vessels trading to Escanaba, Mich., is surrounded to the northward, and on the line of course, with very suspicious ground, a dangerous shoal or small reef having been located there recently. The attention of vessel masters is consequently more than ever exercised regarding the foul bottom in that vicinity, and a well masked light, showing over the different northern sectors, would be of great advantage during the fall navigation. It is learned, however, from an authoritative source, that the Lighthouse Board decline to exhibit a light of any description from Squaw Island this year, on account of a lack of funds in the department, and so, after the strenuous exertions put forth by vessel owners, the present season will probably have to elapse before this long looked for and comparatively important aid can be brought into service.

THE RECORD is proud to re-asseverate in the most emphatic terms, its firm belief in the decisions and discretion of the United States Lighthouse Board, well knowing that there is no department of the federal service more ably presided over and whose subordinates are so thoroughly efficient as the small army of technical professionals and skilled employes held closely under its jurisdiction. Fully admitting, then, the enviable regime of the department, there is but little to advance in the way of argument in favor of this important aid being placed in service during the remainder of the season of navigation for '92. Yet, we are not without a satisfactory feeling that upon a re-consideration of ways and means, some method may be found whereby the department may encompass the financial difficulties at present in sight, and by so doing, light up an area over which no guide now warns the seaman of impending danger.

GREATER care is already being evidenced in the handing of large light steamers, and it is safe to say that rather than keep 3,000 ton boats, flying light, slamming into a head sea for hours, the most discreet and experienced masters will seek shelter, and spend the time lost in planing down, pile-driving, or bucking into a nasty head sea by taking it out quietly at the ring of an anchor. Little can be lost by using advisedly the excellent ground tackle supplied to all lake steamers, as there can be no difficulty in letting go and getting an anchor again promptly, under any circumstances, with the fine modern steam equipment fitted on all recent built steam tonnage.

It is not to be expected that shipbuilders can construct and equip first-class tonnage for the same price as a vessel only fit to rate, for say three years, on her first letter. A somewhat wide-spread feeling has been engendered to the effect, that iron and steel shipbuilders have persistently figured on too wide a margin of profit and that the amounts quoted per ton for a completed hull were only made to be shaded. Be this as it may, keen competition has so far limited any disposition (if any ever existed) to exact fancy figures, that the bottom prices have certainly been reached, and any more shading of prices must certainly tend towards a material saving in the constructive work, to the detriment of the ship and owner. A hull may be satisfactorily completed, but the question remains, "is she all there," after years of service. The writer well remembers in 1868-9, the Atlantic liners, City of Paris and Russia, owned respectively by the Inman and Cunard Lines, they were then perfect types of modern construction, but a dozen years later the upper works of one ship was in a wave, a sinuous, undulating, serpentine curve as it were, and weeping considerably, while the other was apparently as good and straight as the day she was launched, with never a sign of punishment. The inference to be drawn from this illustration is, that not alone should hulls look well while new, but they also must carry their looks after proving their construction by performing that for which they were called into requisition.

The Buffalo merchants have no idea of relinquishing former plans creating a large and commodious outer harbor for a less extensive mode of construction recently suggested and embodied in a report of the district engineer. The merchant's exchange at least realize that lake tonnage has lengthened out a hundred feet, with a corresponding beam, during the past few years, and if the former harbor plans were thought advisable when the original area for an outer harbor was fixed, as, of course, they were, then there is one hundred feet more of reasons for keeping the extension of breakwaters out to the original survey. Attention ought not to be directed to the commerce of, or the port facilities of to-day, where extensive improvements are being carried out, or the cry of inadequacy will be raised almost before their completion, rather should permanent works of national construction be planned with a view to meet the ever-increasing volume of lake commerce, and kept not up to, but fully a decade in advance of all present requirements, and this too, with a due appreciation of what must eventually follow in the wake of a dense population in the west and northwest. The St. Mary's Falls Canal and other important national work in that vicinity should be allowed to speak their full volume of commercial progression in the deliberations over river and harbor improvements on the Great Lakes, and even then, we are liable to err on the side of minimizing rather than on a liberal comprehension of the future growth of this already enormous commerce.

THE LAKE FREIGHT SITUATION.

This week marks a still further improvement in the lake freight situation. The Escanaba ore rate remains at 75 cents, but Ashland has risen to $1,15 and Marquette to $1, both rates being firm. While 3¼ cents is all that is being paid at Duluth on grain loading this week, it is probable that the boats placed to load next week will receive 3½ cents. The Chicago rate is still 2½ cents on wheat to Buffalo, and it is more than probable that this rate will be improved before our next issue. This year's shipments from most of the iron ore ports are already in excess of last year's total, and the shippers give this as grounds for the statement that all except contract shipments are likely to soon be cut off altogether. but vesselmen prophesy that in spite of this talk some good figures will yet be paid on ore shipments this season. Grain receipts promise to be unprecedented in volume, and Milwaukee, as well as the new port of Gladstone, will be heavy grain shipping ports.

The anthracite coal rate to Lake Superior has been restored from 25 cents to 35 cents, but as coal is somewhat scarce and the upper docks crowded, soft coal rates show no signs of improvement.

The rates paid for lumber carriage are steadily improving and very remunerative charters are daily being made. Judging from present indications it looks as if vessel owners would pull up during the balance of the season for the detention and low freights experienced earlier in the year.

CHANGE OF FIRM.

At a recent meeting of the stockholders of the Detroit Dry Dock Co. and Dry Dock Engine Works a change in the personnel of the firm was consummated. Mr. James McMillan retired in favor of Mr. Hugh McMillen as president, Mr. Alexander McVittie taking Mr. Hugh McMillan's position as vice president, also his former duties as treasurer. Mr. Frank E. Kirby retains his office as consulting and constructing engineer, and Mr. Gilbert N. McMillan as secretary of the company. With the exception of the retirement of the former president, the same gentlemen remain to the fore as the active representatives of their several departments.

MORE NEW PASSENGER STEAMERS.

Leopold & Austrian, of Chicago, the Lake Michigan and Lake Superior Transportation company managers are intent upon supplying their line with a more modern class of passenger and freight steamers, and expect to be able to place the first one in commission by June 1 next. Their idea is to construct two or three steel steamers that will cost complete $250,000 each. These will be built to carry both freight and passengers, and the passenger accommodations are to be of the very best. Figures have been obtained from the Chicago Shipbuilding Co. and the Detroit Dry Dock Co. The latter company was represented at Chicago on Thursday last by vice-president McVittie and constructing engineer Frank E. Kirby, by whom figures were submitted for the consideration of the line managers, though no further particulars have yet been given out for publication. It is rumored on good authority that the Chicago Ship Building Co. have already secured the contract for one of these boats. The proposed steamers will be about the length of the Union Line steamer Tioga, viz., 285 feet on the water line and 303 feet over all. Her beam is to be 42 feet, with a corresponding depth of hold, in order to secure a double tier of state rooms, so as to furnish accommodations for 300 first-class passengers.

LATER.—The Chicago Ship Building Co. have secured the contract for one steel passenger steamer to cost about $300,000. Her dimensions are to be 295 feet over all, 275 feet keel, 42 feet beam, and 24.6 depth of hold, 32 feet depth to upper deck. Engine triple expansion, Cylinders 23, 38 and 62 by 36 inch stroke. Two Scotch type boilers 11 feet 6 inches by 20 feet, with double ends. She is to have a water bottom. Water-tight bulkheads and every modern equipment for handling ship and cargo. Commencing June 1, 1893, she is to enter the Chicago-Sault Ste. Marie route, making two trips weekly.

OPENING AND CLOSING OF THE ST. LAWRENCE CANALS.

CHICAGO, ILL., Sept., 21, 1892.

To The Marine Record.

What is the total distance between Lake Ontario and Montreal, at the head of navigation in the gulf of St. Lawrence? I would also thank you to furnish me, through the columns of THE RECORD, with the dates of the opening and closing of the several canals connecting the above waterways.

AN OLD SUBSCRIBER.

From Prescott, Ont., or Ogdensburg, N. Y., the distance via. the St. Lawrence river canals to Montreal is 119 miles. The total canal navigation is 43⅝ miles, and on the river 75⅜ miles. The Williamsburgh canals, under which term are included the Galops canal, Rapide Plat canal and Farren's Point canal, were closed to navigation in 1890, on the 4th of December, and reopened on the 21st of April, 1891. The next in order from the lakes is the Cornwall canal. This was also closed on the same date as the foregoing, but did not open until May 4th, 1891. The Beauharnois canal was closed on the 30th of Novemeber, 1890, and was reopened for traffic on the 24th of April, 1891. The Lachine canal 8½ miles long and the last of the chain leading to Montreal was the first to freeze up, being closed on the 29th of November, 1890, and reopened for navigation April 28th, 1891.

CAUSUALTIES OF THE WEEK.

The successful work done on the wooden steamer Neshoto ashore at Union Bay, near Keweenaw Point, Lake Superior, was effected after a jettison of about 1,000 tons of coal and she arrived at Duluth three hours ahead of the tug sent to her assistance. A survey has been held on her in the new drydock at West Superior.

The only wreck of importance during the week just passed was the total loss through collision of the Orient Line steamer Vienna between White Fish Point and Parisian Island on Lake Superior, a detailed account of which is given in another column of this issue.

The squally weather experienced during the week occasioned a number of minor casualties. The barge Aunt Ruth waterlogged off Point au Barques, Lake Huron, the schooners Sunrise, Heather Bell, Fitzhugh and Wertz each lost considerable canvas, the Queen of the Lakes and May each lost their deckloads, the Magee suffered damage through a collision with the barge Roberts in tow of the Tempest. The small steamer, A. B. Taylor, stranded near Saugatuck, Mich., and leaked badly after her release. The William Chisholm broke her piston and blew out her high-pressure cylinder head on Lake Michigan, she was towed to Cleveland by the steamer Roumania. The A. A. Parker broke her shaft on Lake Huron on Sunday and was towed to Cleveland. The steamer Nipigon is receiving repairs at Detroit after her collision with the Vienna. The schooner Fannie Campbell lost her deckload and waterlogged, with the loss of sails and rigging on Lake Huron, she was towed to Port Huron for repairs.

DISCUSSION ON A SIDE ISSUE.

BUFFALO, N. Y., Sept. 20.

To The Marine Record.

In the last issue of THE RECORD Capt. McFarlane, as a loyal captain should, takes exception to some remarks of mine regarding the whaleback steamer Washburn, poking a little fun at me as a side issue. Permit me a few words upholding the position I took. Capt. McFarlane says the Washburn used all four of her ports while in Buffalo on her last trip. If she did it must have been largely for purposes of ventilation, as a great part of her cargo was unloaded by a crane through her top hatches while her ports were closed, and I can prove it, notwithstanding, the gangways might have been open. The record for unloading 2,400 tons of package freight at this port is 6 hr., 15 m. The Washburn has not unloaded a similar cargo in anything like that time, and Capt. McFarlane knows it. If the Captain still thinks I am mistaken, and will furnish me the exact time it took to discharge his last cargo, I will insure its publication in a well known Buffalo daily paper. Capt. McFarlane can ascertain my identity through THE MARINE RECORD.

BUFFALO CORRESPONDENT.

FLOTSAM, JETSAM AND LAGAN.

Thomas P. Davidson of Milwaukee represents the insurance companies in the Neshoto survey at W. Superior.

Capt. John Stevenson has been appointed master of the steamer Dean Richmond, vice Capt. Stewart, resigned on account of sickness.

Bids for dredging Duluth harbor from Williams, Dougherty and Upham at $65,000 was the lowest and has been forwarded to Washington.

Three captains have now reported seeing masts sticking out of water near Long Point, Lake Erie. The last one to sight the wreckage is the captain of the little steambarge Wyoming, which arrived at Buffalo on Sunday. He says he saw a large piece of deck work also.

The following bids for dredging Thunder Bay River, Mich., were opened by Gen. Poe at Detroit, Saturday: James Rooney, Toledo, Ohio, 47 cents per cubic yard; C. E. Mitchell & Co., Ludington, Mich., 39⅞ cents per cubic yard; Bay City Dredging Co., Bay City, Mich., 48 cents per cubic yard; H. W. Hubbell and Co., Saginaw, Mich., 29 cents per cubic yard.

The great lake sea serpent has leisurely wended its way from Lake Erie to Lake Michigan, being last sighted by a party of tourists off Petoskey. Harry Bissell of St. Clair, Mich., and Fred Lansing of Port Huron, Mich., are the irrepressible culprits this time and they still stick to sighting his snakeship, all in one piece, 75 feet long, 4 feet in diameter, and eyes like dinner plates. There are lots more vacation seekers to hear from!

The master of the steamer Owego, the "greyhound' of the lakes, says he left Detroit 20 minutes behind the Pioneer and arrived in Buffalo 40 minutes ahead of her, thus beating her by exactly an hour. The Pioneer was loaded with ore and when she made her fast trip on the way up she was light. Capt. White of the Pioneer says the record of his trip up was correctly reported at 15 hours 10 minutes, or a trifle under 17 miles per hour.

The United States Marshal at Detroit seized the freight barge Enterprise early on Monday morning. The barge was on her way to Tonawanda, and was captured off Grosse Pointe. An attachment had been levied against her in behalf of the Mitchell Transportation Co., whose boat, Mary B. Mitchell, had been injured in a collision with the Enterprise, off Dunkirk, on November 17, 1891. The damages asked amount to $3,950. The Enterprise is a Canadian boat, but was running in American waters at the time she was seized.

The MARINE RECORD trips up the *Safety Valve*, a paper published in this city, for talking about matters it knows nothing about, to wit: The fast run of the Teutonic. THE MARINE RECORD says:

"The foregoing terribly hard untruths are propounded by an individual who, we surmise, has but a scant knowledge of the causes involved in the careful navigation of a transatlantic passenger steamer. The half digested notions which our contemporary appears to have adroitly concealed under the (to him) vague terms of the "geographical degrees due to the spherodicity of the earth's surface and other causes" are simply so much gush, and proclaim an entire misapprehension of the duties of ship's officers, besides, giving the lie presumptive to the engine room, the bridge and chart room. Our eminent contemporary should not stoop to vilify a worthy and skillful class of men for no cause; hence our protest at this time."

This is a just rebuke to impertinence.—*Engineer, New York.*

The MARINE RECORD, Cleveland, O., now comes out ship rigged having added four more pages to its usual weekly edition, THE RECORD records marine events summer and winter.—*The Cleveland Press.*

NOTES.

Large commodious dry docks are now a feature in the marine industry of the lakes, but as yet they are all of timber construction. Masonry or stone work is not considered necessary at this date.

The names of the crew of the schooner City of Toledo, lost off Pierport, Lake Michigan, are as follows: Master John McMillan, Manistee, Mich.; Lizzie McMillan, the captain's daughter, acting as cook; seamen. John Larsen, Wm. McCarthy, Angus McNeil and John O'Neil, of Chicago, and George McKinsey, of Grand Haven. Capt. McMillan leaves a wife and five children residing at Manistee, Mich.

The contract for furnishing the steel for the new boiler of the U. S. S. Michigan, to be built by the Lake Erie Boiler Works of Buffalo, N. Y., has been taken by the Wellman Steel Co., of Thurlow, Pa., Which leads the *Army and Navy Journal* to remark that "Some recent tests of the material manufactured at these works demonstrate that a 'new Richmond' is in the field of steel making of high grade.

American ship-builders are going to demonstrate soon what they know about building greyhounds for the transatlantic business. Within a few weeks, work will be commenced in Cramps' Shipyard on the two large steamships to be built for the Inman Line. They will be constructed in accordance with the contract by which the city of Paris and the City of New York were registered by the Government.

Captain Samuel Brooks, of the Guion steamer "Arizona," sailed from New York this month on his 666th trip across the Atlantic. Capt. Brooks, who is sixty-one years of age, is a tall commanding figure standing nearly six feet. He was formerly in the Inman Company's service having commanded several of their steamers, including the City of Brussels, City of Chester, and City of Brooklyn. He was appointed to the Arizona when the Alaska was launched in 1881.

In our issue of Sept., 16, on tenth page it was stated that Ex-Commissioner of Navigation William W. Bates, probably the very best authority in the country on the subject, places the amount paid to foreign vessels for freight charges alone in the year 1890 at $207,083,310, and of course they have since increased with our rapidly growing foreign trade. With the amounts paid foreign vessels for passenger service and carrying our mails added to this, it easily exceeds an estimate of $25,000,000, which amount has recently been used in statistics. We are indebted to the courtesy of a correspondent for calling our attention to the latter figures, $250,000-000 is the estimate, the wide discrepancy being brought about through the omission of a cypher after the figures 25.

Eight more bodies have been recovered from the Western Reserve wreck. They were the remains of Captain Albert Myers, the Reserve's commander; the little son of Captain P. Minch, the owner, and six unknown. They were in a bad state of decomposition and had to be buried on the shore by the life saving crew at station 12. One of the six is thought to be that of Martin Klausen, the look-out, but Captain Frahm said he was not sure. The bodies of Captain Myers and the Minch child will be exhumed and brought to Cleveland. This makes a total of fourteen bodies found up to Thursday last September 15, or eight days after their immersion, the yawl having capsized on Wednesday morning, Sept. 7. There is little doubt but that other bodies will be recovered, although from their lengthy stay in the water their features may be unrecognizable.

Mr. F. A. Kirby, superintendent of the Iron, Steel and Composite ship building yard of the Detroit Dry Dock Co., at Wyandotte, Mich., is the paternal ancestor of a precocious youth of tender years about whom many amusing incidents are related. It appears that a short time ago the shipbuilder in embryo—or peticoats, mastered a drawing which to the initiated was understood to be the picture of a Wyantotte built steamer, and it was pronounced a fair representation thereof, save for a lot of unaccountable figures of men supposed to be wildly gesticulating in the vicinity of the door leading to the engine room. When asked the necessity of this extra work, the budding genius candidly admitted that the bell pulls had given out, "got bwoken," and that it was necessary to have several of the hands stationed to pass the word along to the engineer, or else "nuffin was no good on the pilot houfe," but, perhaps the young man has solved the problem of Chicago's greatness in his continual and ever present conceit and belief in the town of which his father is Ex-Mayor, and everything with master Bub is Wyandotte. However, after undergoing the usual maternal fixing up, he was launched a couple of Sundays ago to his first attendance at Sunday school, he seemed to heartily enjoy the proceedings in that nursery of juvenile piety, especially the singing of a hymn entitled "Why Not for Jesus" for after the pupils were dismissed he caroled the ditty all the way home, and after, being asked what he was singing, he replied "Wyandotte, *sic* Whine-dot for Jesus" and it still goes to the honor and glory of the shipbuilding town.

THOSE "WHALEBACK" BARGES.

Special Correspondence to the Marine Record.

W. SUPERIOR, WIS.—The account given in THE MARINE RECORD of Sept. 15, of the four large freight vessels building by the American Steel Barge Co. is eminently correct in all particulars, and the two which were reported as nearly completed are expected to be in service this season, but I desire to correct the impression that these are steamers. They are barges—tow-barges, not steam barges. They are to be placed alongside the flour mills until loaded. Then they will be towed away on their trip and another barge placed there. By this means there need be no handling or storage in the mills or elevators, as there will always be a barge ready to receive the freight consigned to the lower lakes. There is little doubt but that the flour trade in particular will thus be ably catered for and attended to by this special class of tonnage, built expressly to ferry flour from the head of the lakes. Further than this it has now been decided that the barges will have seven large gangways on the port side, and none at all to starboard. J. W. P.

AN ATLANTIC LEVIATHAN.

The Campania, one of the two new Cunard liners just launched by the Fairfield Company, will, it is expected, be completed in time to make her first trip to New York next April, prior to the opening of the Chicago Exposition. The Campania will be 600 feet long by 75 feet beam, and will have a displacement, it is said, of over 19,000 tons. It is expected that she will, on her trial trip, steam 23 knots. On her voyage she is to make a continuous speed of 21 knots from port to port. The machinery consists of twin phosphor-bronze screws, driven by two pairs of triple-expansion engines, each capable of indicating up to 15,000 horse power. Each engine has two cranks and five cylinders. Two high-pressure cylinders will exhaust into an intermediate cylinder, which will exhaust into two low-pressure cylinders; the pistons of these last are on the same rods as the pistons of the high-pressure cylinders. There will be twelve double-ended boilers, each with eight furnaces, and there will be six stokeholds. The immense rudder is of German construction all other parts of the ship and her equipment is of British manufacture. The Lucania is to be the name of her sister ship.

The blatant blatherskite temporarily substituted to write the editorial column of *The Safety Valve*, New York, insists upon getting back at the officers of the Atlantic Liner, presumably to derive some satisfaction for a few paltry dimes dropped at some time with other passengers "betting on the day's run." With that pig-headed obstinacy only attained by those who think they know it all, it is asserted that "cooking" the daily distance run is an old trick, and further, that if a steamer is found to have made 528 miles in the 24 hours, she must have come along exactly 22 miles per hour. Vituperation comes with but poor grace from a source where honest convictions, if not praise, for steam users at least, might be expected. It is but recently since this temporary penpusher of misguided ignorance was sat down upon by THE RECORD, yet he again bobs up serenely at the same old trick, with more inaccuracies crowded into a few lines than can be found in any publication extant. In referring to a record day's run of an Atlantic liner this asinine makeshift states, and we quote literally:

"It is called 'cooking' the record, and as we inferred above, it is an old trick."

"The master of the ship, improperly called 'captain,' and the chief engineer as well, usually have money in the pool, though buying them, of course, through an intermediary and without their names appearing. When the conditions are favorable they can come very close to the figures. The engineer can force the engines or he tan lag to hit the figures they are betting on, but where the ship is after a record there is but one resource, and chat is 'cooking.'"

"Betting on the number of the pilot boat from which the New York pilot is to be drawn is another "skin" game played by the officers of many of the Atlantic Liners."

"There are only two pilot boats at one time cruising east in the track of steamers. The master always knows which these are, as well as the number of that left in the Hook, the order of relief and service being regular. The master bets (through an agent, of course) on one of the two he knows he will meet, and should he descry the other one through his glass, he bears off, heeding not the signals she makes."

It is a waste of good ink and paper to inflict upon our readers such twaddle, and our only hope is that some other sore-head may see the effect of "riot run loose" in the addle-pated upper story of a nincompoop, and thus be taught to act and think decently of the ship officers when crossing the pond, and to act honestly thereafter, even if his presumptive pencil-pushing prerogatives had been mildly rebuked during the trip.

Send $2.00 to Smith & Swainson, Publishers THE MARINE RECORD, Cleveland, O., for a large photogravure picture of the steel steamer "Western Reserve." Size 22 x 28 inches.

PLEASANT WORDS FOR THE MARINE RECORD.

The photogravure supplements of THE MARINE RECORD are very fine.—*The Collingnood Bulletin.*

That excellent marine journal, THE MARINE RECORD of Cleveland has been enlarged and otherwise improved. THE RECORD is a welcome visitor to the *Herald's* exchange table.—*The Wyandotte Herald.*

In its old dress and comparative diminutiveness THE MARINE RECORD was always a valuable and interesting paper. Now that its size is increased and its typographical appearance enhanced, its appearance every week will be even more welcome.—*The Buffalo Enquirer.*

THE MARINE RECORD of Cleveland, came out last week in a new dress and an additional four pages of its usual spicy reading. THE RECORD is a splendid journal thoroughly devoted to all the interests of the Great Lakes, and the *Inland Ocean* is pleased to note this indication of increased prosperity on the part of its owners, Messrs. Smith & Swainson.—*The Inland Ocean, Superior, Wis.*

THE MARINE RECORD, published at Cleveland, Ohio, is a live and progressive journal. The editor says: "With this issue of THE MARINE RECORD (September 1) we launch out an enlargement of four extra pages, making a twenty-page paper of that which a decade ago contained but four pages. This record of steady advancement is due to the increasing importance of the mercantile marine of the great lakes, and we are enabled by our increasing patronage to enlarge and improve the favored organ of the lake marine fraternity to its present proportions."—*Commercial List and Price Current, Philadelphia, Pa.*

The great dry dock of the American Steel Barge Company at West Superior, Wis., has been completed, and water was let into it for the first time last Thursday. Superior now can boast of having the largest dry dock on fresh water, the measurement being 500 feet long on the keel blocks, 90 feet wide and 18 feet deep on blocks. It is 100 feet longer than any other dry dock on the Great Lakes, and will hold at one time two of the largest vessels on the lakes.

It will be a great convenience to vesselmen, as they have heretofore been compelled to go to Detroit, Cleveland or Buffalo to make any repairs. A channel has been dredged to the dock and now everything is in readiness for work.

The engine house stands at the entrance and is supplied with two mammoth Porter engines of 125 horse power which have a pumping capacity of 16,000 gallons a minute. They can empty the dock in two and a half hours.

The most unique part of the dock is the gate at the entrance to the dock. Near the top it is shaped like a boat so that when the water is let in it can be floated out of the way. There are valves in the bottom through which the water can be let in to sink it.

The Barge Company will employ fully 1,300 hands in its yards this fall and winter. Four vessels are now building there.—*The Inland Ocean, Superior, Wis.*

PROPOSALS.

U. S. ENGINEER OFFICE, Duluth, Minn., August 19, 1892.—Sealed proposals for constructing a breakwater at Ashland, Wisconsin, will be received at this office until 12 m., September 27, 1892, and then publicly opened. Specifications, blank forms, and all available information will be furnished on application to this office. W. L. FISK, Captain, Corps of Engineers.

U. S. ENGINEER OFFICE, Duluth, Minn., August 16, 1892.—Sealed paoposals for constructing a breakwater at Agate Bay, Minn., will be received at this office until 12 m., September 27, 1892, and then publicly opened. Specifications, blank forms, and all available information will be furnished on application to this office. W. L. FISK, Captain, Corps of Engineers.

UNITED STATES ENGINEER OFfice, 34 West Congress street, Detroit, Mich., September 8, 1892. Sealed proposals for furnishing by the hour 1 dredge, 1 tug, and 2 dump scows, for use at Detroit River, Mich., will be received at this office until 2 p. m October 8, 1892, and then publicly opened. Specifications, blank forms, and all available information will be furnished on application to this office. O. M. POE, Colonel, Corps of Engineers, etc. 9-15-10-6

TREASURY DEPARTMENT, WASHington, D. C., September 3, 1892. Sealed proposals for constructing a steam propeller, to be named Wm. Windom, for the United States Revenue Cutter Service, will be received at this department until 2 o'clock p. m. Wednesday, October 5, 1892. Bids must be in accordance with the instructions on page 5 of the specifications, and be addressed to the Secretary of the Treasury, and indorsed on the envelope, "Proposals for construction of steam propellers for United States Revenue Cutter Service." Specifications for the work will be furnished to parties desiring to submit bids upon application to this department. The right is reserved to reject any or all bids, and to waive defects, if deemed for the interest of the government so to do. CHARLES FOSTER, Secretary.